

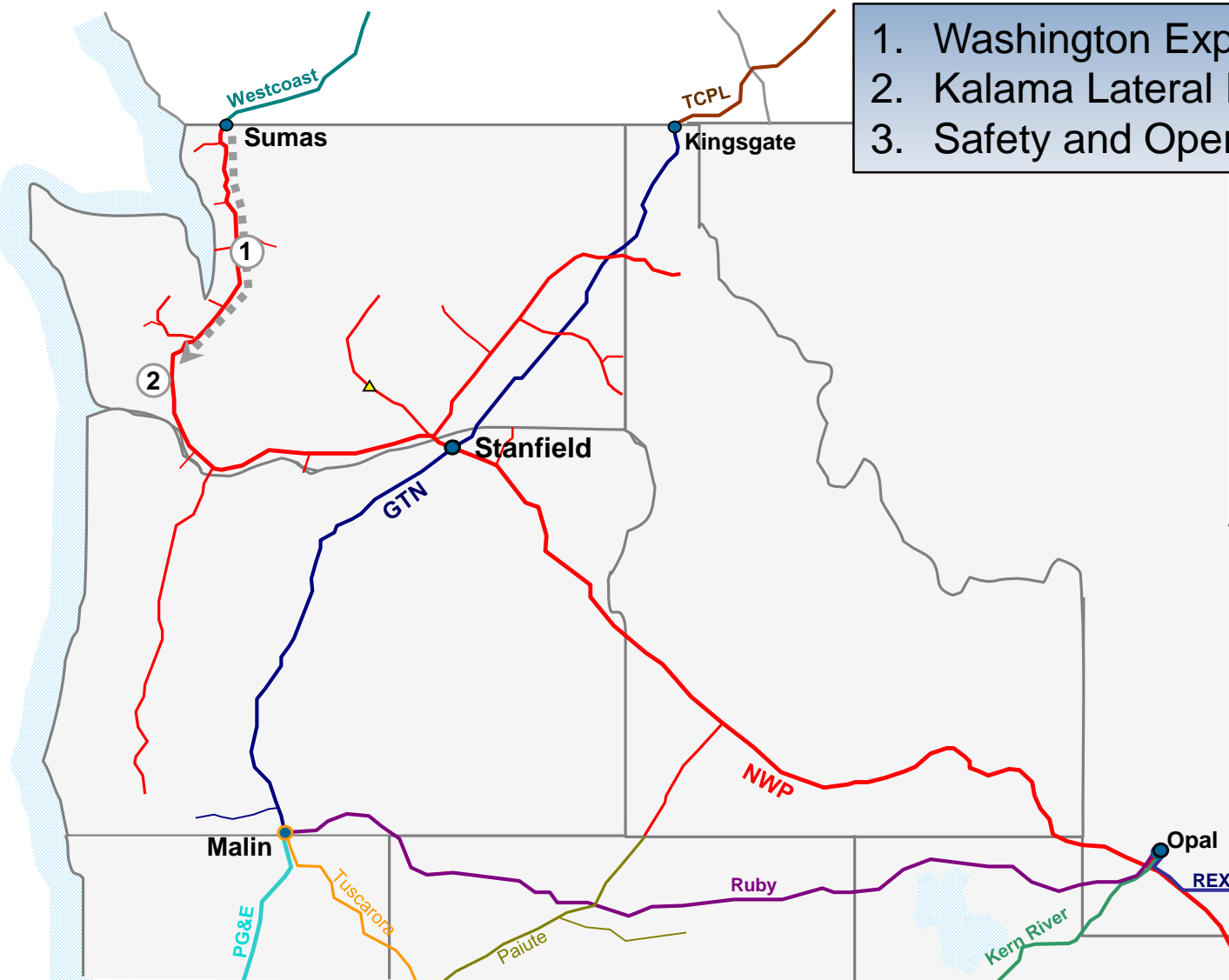
2015 Citizens Committee on Pipeline Safety Meeting

Northwest Pipeline LLC
September 9, 2015



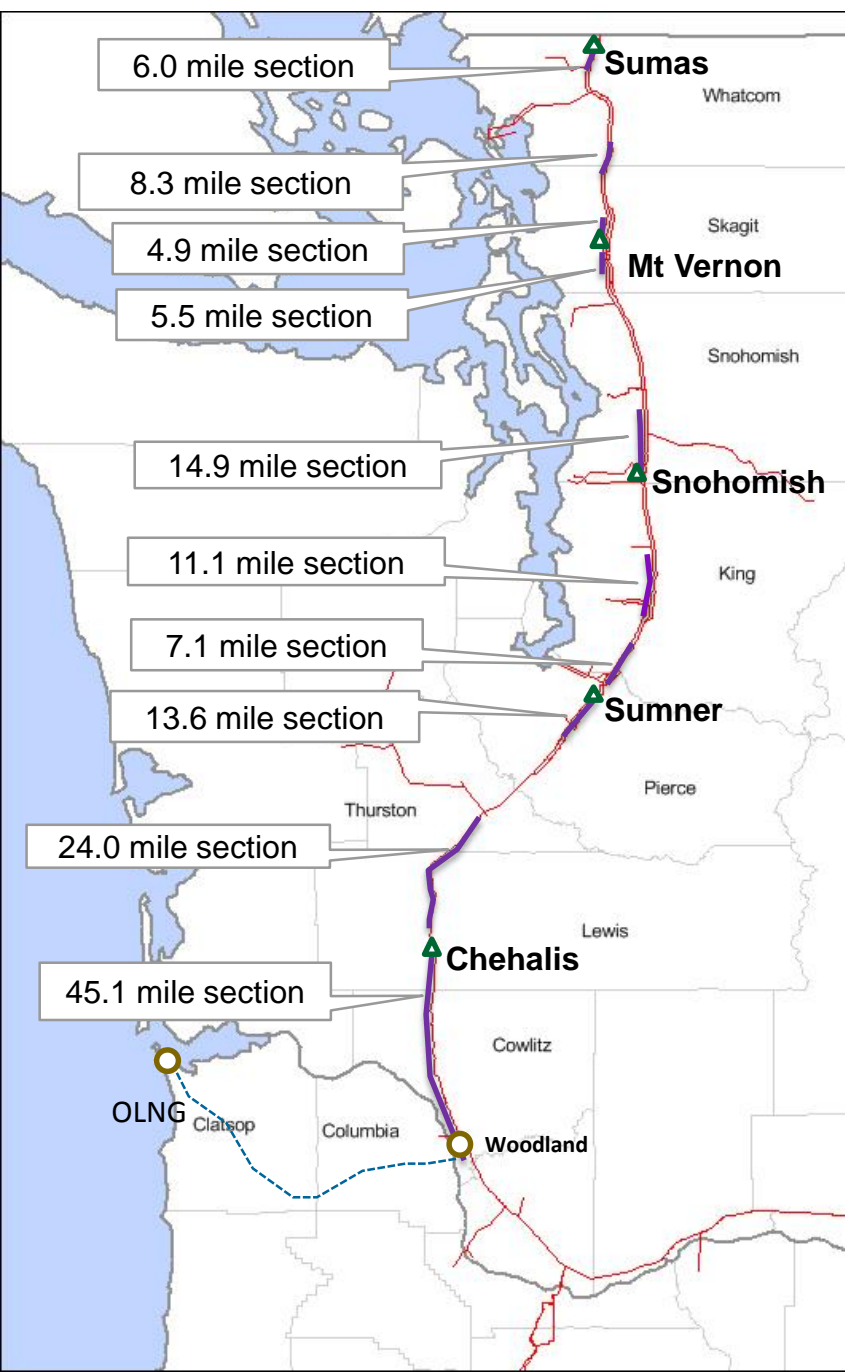
Topics of Discussion

1. Washington Expansion Project
2. Kalama Lateral Project
3. Safety and Operations



Washington Expansion Project (WEP) Overview

- > Expansion of Northwest's system from Sumas to Woodland, Washington to serve LNG Development Company's (Oregon LNG) liquefied natural gas (LNG) terminal capable of liquefying 1.25 Bcf/d
 - 140 miles of 36-inch diameter pipeline looping; and
 - ~ 90,000 incremental horsepower installed at existing compressor stations along the I-5 corridor
- > Provides 750,000 Dekatherms per day (Dth/d) of firm transportation to:
 - An interconnect with the proposed Oregon Pipeline located near Woodland, Washington which will deliver natural gas to the Oregon LNG terminal located in Warrenton, Oregon
 - Approximately 500,000 Dth/d of operationally available capacity has been available for deliveries to Woodland, Washington
- > Estimated fully loaded capital of \$1.1 Billion
 - \$0.56 Dth/d on a levelized basis
- > Target in-service date is November 2018 per the Federal Energy Regulatory Commission (FERC) application
- > Design allows for a scaled down project if a smaller market comes in earlier than the proposed in-service
- > Under the jurisdiction of the FERC



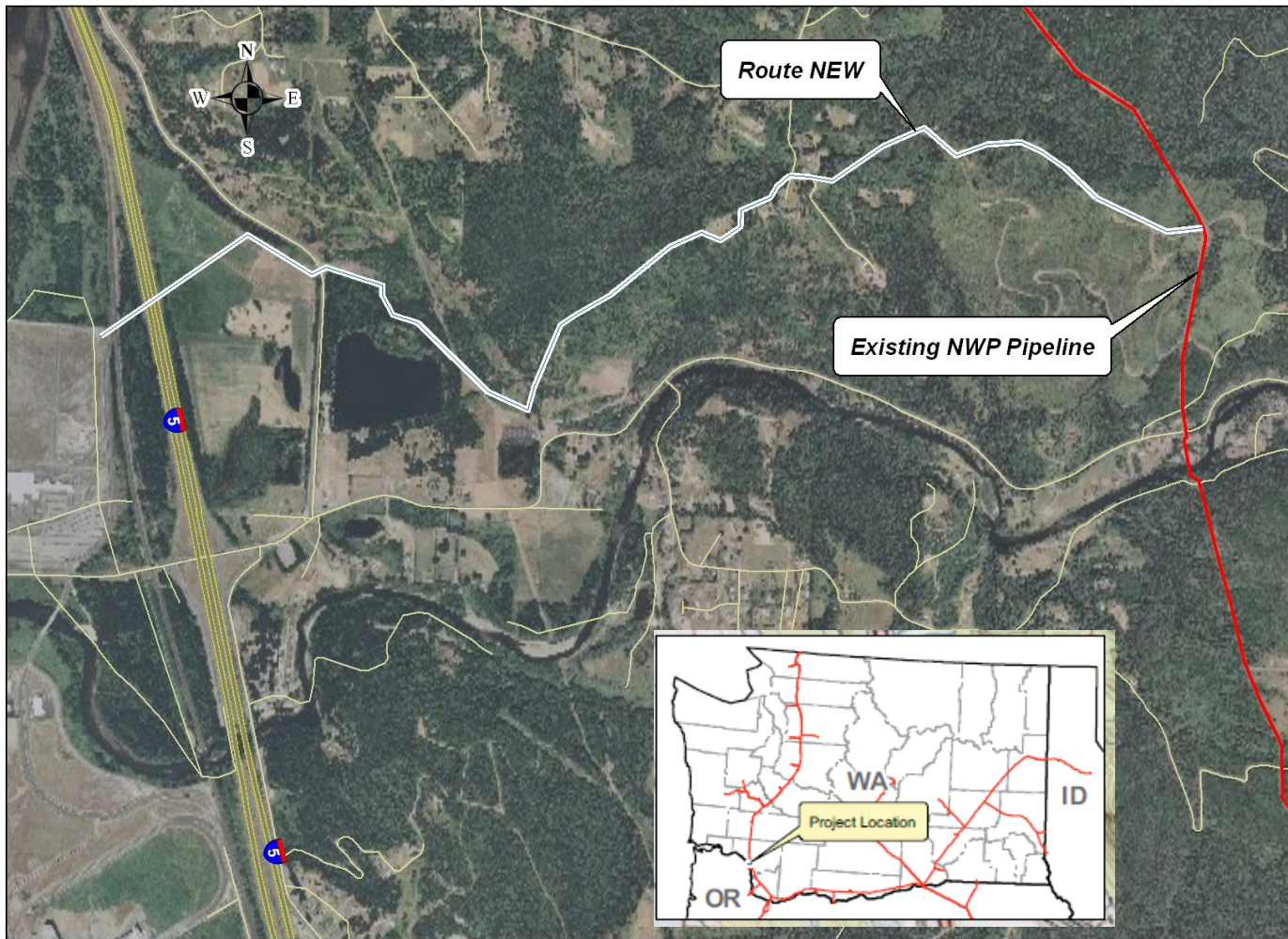
WEP Design

- > Fills in un-looped sections of Northwest's existing 36-inch pipeline loop creating a continuous 36-inch pipeline loop along side a 30-inch pipeline in the I-5 corridor between Sumas and Woodland
 - 10 loops traversing 8 counties
- > Includes incremental compression at five existing compressor stations in the I-5 corridor
- > Provides an opportunity to other potential customers in the region to utilize the work product for a smaller project

WEP Project Timeline

- > Entered FERC's pre-filing environmental review process in July 2012
 - WEP is considered a connected action with the LNG terminal and the Oregon Pipeline
 - FERC required Oregon LNG to obtain upstream capacity to serve its load
 - Oregon LNG is taking the risk on the secondary market
- > Filed FERC certificate June 2013
 - FERC will review Oregon LNG (CP09-6), Oregon Pipeline (CP09-7) and WEP (CP13-507) as a connected action
 - One Draft Environmental Impact Statement (EIS)
 - One Final EIS
 - One certificate order
- > Draft EIS was issued August 5, 2015
 - Comments on the Draft EIS are due October 6, 2015
 - Six FERC sponsored public meetings to take comments on the Draft EIS are scheduled September 14-24, 2015
- > Final EIS is scheduled to issue February 12, 2016
- > Certificate order is anticipated to be issued mid-late 2016

Kalama Lateral Project



- > 3.1-mile, 24-inch diameter pipeline extending from Northwest's mainline to the Port of Kalama in Cowlitz County, Washington

Kalama Lateral Project Overview

- > Project is under FERC jurisdiction
- > Provides up to 320,000 Dth/d of firm transportation capacity to Northwest Innovation Work's (NWIW) proposed methanol plant at the Port of Kalama
 - NWIW proposes to construct a 2-phase methanol facility requiring approximately 160,000 Dth/d per phase
- > Target in-service of methanol plant is late 2018

Kalama Lateral Project Background

- > Lateral was previously filed with the FERC for a proposed power plant in 2012
- > FERC certificate filing was withdrawn after a significant amount of review when the customer cancelled its project in 2012
 - DEIS was near issuance
- > 13 alternative routes were evaluated. The current project route, the Timber Rock Route, was deemed the preferred route in the previous certificate.
- > Pre-construction agreement was executed with NWIW in July 2014 authorizing all work required to re-file and obtain a FERC certificate for the lateral

Kalama Lateral Project Timeline

- > Filed FERC certificate October 27, 2014
 - Preferred route - Timber Rock Route

- > Environmental Assessment was issued on July 13, 2015
 - FERC staff concluded that approval of the proposed project, with appropriate mitigating measures would not constitute a major federal action significantly affecting the quality of human life
 - Comment period ended on August 12, 2015

- > Certificate order anticipated - October 2015

- > In-service date of methanol plant is late 2018

Kalama Lateral Project - State Environmental Policy Act (SEPA)

- > SEPA was enacted by the Washington Legislature in 1971 to assist the state and local agencies in identifying environmental impacts that could result from governmental decisions when:
 - Issuing permits for private and public facilities, and
 - Issuing new regulations, policies or plans
- > Information collected during the SEPA review process helps agency decision-makers, applicants and the public understand how a proposal will affect the environment
 - Information may be used to change a proposal to reduce likely environmental impacts
 - Information may be used to apply conditions or deny a proposal if adverse environmental impacts exist
- > SEPA is reviewing the methanol terminal, dock and pipeline as a single project under SEPA
 - The Port of Kalama and Cowlitz County are acting as co-leads for the SEPA process
 - The SEPA process is required for the Kalama Lateral Project to receive state and local permits
 - The pipeline remains under the jurisdiction of FERC

Natural Gas Pipeline Safety - Overview

> Safety is built into our pipelines

- Routed in locations where a pipeline can be safely operated and constructed – minimizes impacts to communities where possible
- Constructed by welding high-strength pipe (substantial wall-thickness)
- 100% of the welds are x-rayed
- Buried with a minimum of 36 inches of cover
- Tested before going in-service at pressures higher than allowable operating pressures

> Interstate pipelines are regulated

- Pipelines are regulated by the U.S. DOT – Pipeline and Hazardous Materials Safety Administration (PHMSA)
- PHMSA administers safety regulations, conducts audits, and tracks pipeline incidents
- Pipeline operators are required to administer the following programs:
 - Maintain an Operations and Maintenance Manual
 - Operator Qualification Program
 - Public Outreach Program
 - Emergency Response Program
 - Integrity Management Program

Natural Gas Pipeline Safety - Design

- > Pipeline design will meet or exceed all PHMSA requirements
 - Radiographic inspection: 100% vs 10% minimum required
 - Pressure testing: 125% vs 110% minimum required
 - Burial depth: 36" vs 24" minimum required
- > Wall thickness determination – governed by PHMSA; criteria based on class location:
 - Class I – DF 0.72
 - Class II – DF 0.60
 - Class III – DF 0.50
 - Class IV – DF 0.40
- > Block valve spacing – governed by PHMSA; criteria based on class location. Each point within a pipeline class must be located within the following distances of a block valve:
 - Class I – 10 Miles
 - Class II – 7 ½ Miles
 - Class III – 4 Miles
 - Class IV – 2 ½ Miles

Natural Gas Pipeline Safety - Routing

> Pipeline routing

- Ensure safe construction and operation is feasible
- Accessibility
- Hazard avoidance
- Pipeline stability (avoiding geohazards, side hill slopes and maximizing ridgeline alignments where possible)
 - If not possible, obtain geotechnical analysis of potential landslide areas to assure it is safe to construct and operate

> Geologic hazards evaluation

- Phase 1 – initial office review identifies existing landslides and areas susceptible to landslides within ¼ mile of proposed pipeline alignment by reviewing published maps and aerial photographs
- Phase 2 – aerial reconnaissance of potential moderate or high risk areas identified during Phase 1 process
- Phase 3 – surface reconnaissance review of moderate or high risk areas identified during Phase 1 & 2 processes
- Phase 4 – LiDAR data review aids identification of terrains with possible landslide morphology, initiating additional surface reconnaissance of moderate to high risk areas

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